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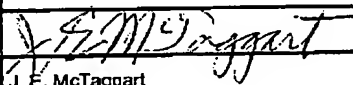
PTO/SB/21 (07-06)  
Approved for use through 09/30/2006. OMB 0651-0031  
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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/764,322	
	Filing Date	01/22/2004	
	First Named Inventor	Kevin Beller	
	Art Unit	2837	
	Examiner Name	Marlon T. Fletcher	
Total Number of Pages in This Submission	21	Attorney Docket Number	1484

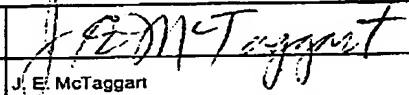
ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks Filing a brief in support of appeal.		

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name			
Signature			
Printed name	J. E. McTaggart		
Date	08/28/2006	Reg. No.	29/754

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	J. E. McTaggart	Date	08/28/2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.  
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

# **FEE TRANSMITTAL**

## **For FY 2005**

☒ Applicant claims small entity status. See 37 CFR 1.27

**TOTAL AMOUNT OF PAYMENT** (\$) 250.00

### **Complete if Known**

Application Number 10/764,322  
Filing Date 01/22/2004  
First Named Inventor Kevin Beller  
Examiner Name Marlon T. Fletcher  
Art Unit 2837  
Attorney Docket No. 1484

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### **METHOD OF PAYMENT (check all that apply)**

☐ Check ☒ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_

☐ Deposit Account Deposit Account Number: \_\_\_\_\_ Deposit Account Name: \_\_\_\_\_

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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### **FEE CALCULATION**

#### **1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

#### **2. EXCESS CLAIM FEES**

##### **Fee Description**

Each claim over 20 (including Reissues)  
Each independent claim over 3 (including Reissues)  
Multiple dependent claims

Fee (\$)	Small Entity Fee (\$)
50	25
200	100
360	180
Multiple Dependent Claims	
Fee (\$)	Fee Paid (\$)

**Total Claims**      **Extra Claims**      **Fee (\$)**      **Fee Paid (\$)**

- 20 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

HP = highest number of total claims paid for, if greater than 20.

**Indep. Claims**      **Extra Claims**      **Fee (\$)**      **Fee Paid (\$)**

- 3 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

HP = highest number of independent claims paid for, if greater than 3.

#### **3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

**Total Sheets**      **Extra Sheets**      **Number of each additional 50 or fraction thereof**      **Fee (\$)**      **Fee Paid (\$)**

- 100 = \_\_\_\_\_ / 50 = \_\_\_\_\_ (round up to a whole number) x \_\_\_\_\_ = \_\_\_\_\_

#### **4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Filing a brief in support of an appeal.

**Fees Paid (\$)**

250.00

### **SUBMITTED BY**

Signature *J. E. McTaggart* Registration No. 29,754 Telephone 805 339 0456  
Name (Print/Type) J. E. McTaggart (Attorney/Agent) Date 08/28/2006

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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AUG 28 2006

Agent Docket No. 1484

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

August 25, 2006

In re Application of: Kevin Beller

Application No. 10/764,322 : Group Art Unit 2837

Filed: 01/22/2004 : Examiner: Marlon T. Fletcher

For: HUM-CANCELLING ELECTROMAGNETIC PICKUP FOR STRINGED MUSICAL  
INSTRUMENTS WITH TONAL CHARACTERISTICS OF SINGLE COIL PICKUPS

Changed to: COMPACT HUM-CANCELING MUSICAL INSTRUMENT PICKUP WITH  
IMPROVED TONAL RESPONSE

APPEAL BRIEF UNDER 37 CFR 41.37

Mail Stop Appeal Brief

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450 FAX 571 273 8300

The present Appeal Brief is submitted in the above  
identified application under the following headings specified in  
37 CFR 41.37:

(I)-(IV): page 2 of this paper.

(V)-(VII): page 3.

(VIII) Claim appendix: page 12.

(IX), (X): page 18.

08/29/2006 TL0111 00000019 10764322

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**(I) Party of Interest:** Inventor Kevin Beller and Assignee Carter Duncan Corporation dba Duncan Seymour Pickups, currently represented by the present Agent of Record, J. E. McTaggart, Reg. No. 29,754, having been appointed by the party of interest effective 07/21/2006, Confirmation No. 8173, in replacement of the previous original Attorney of Record.

**(II) Related Appeals and Interferences:** None.

**(III) Status of Claims:** In an Office Action mailed 01/25/2006, following one previous Office Action mailed 07/27/2005, all pending claims 1-5, 9, 10, 12, 13, and 16-18 were rejected and the rejection was made FINAL.

**(IV) Status of Amendments:** An amendment filed by FAX 08/14/2006 canceled claims 1-5, 9, 10, 12, 13, and 16-18, and presented new claims 19-27. Receipt of this amendment by Examiner Fletcher was confirmed via telephone enquiry, however, as of this date, Applicant has received no office communication responsive to the amendment filed 08/14/2006.

NOTE: In the 08/14/2006 amendment on page 1, the mailing date shown for the Office Action/final rejection "06/01/2005" is a typographical error: this should be corrected to "01/25/2006".

Also the Agent Docket No."1471" is a typographical error: this should be corrected to "1484" as shown on the Transmittal Form.

(V) Summary of claimed matter: New claims 19-27, as listed in the 08/14/2006 amendment and as listed herein in appendix (VII), are hereby presented in accordance with 37 CFR 1.116(b)(2) as being in better form for consideration on appeal and as overcoming the 37 CFR 112 claim rejections, item 1 in the OA..

(VI) Ground of rejection:

Claims 1-4, 5, 9, 12, 13, and 16-18 are rejected under 35 USC 103(a) as being unpatentable over Blutcher et al (5,811,710) in view of Stich (5,789,691) .

Claim 10 is rejected under 35 USC 103(a) as being unpatentable over Blutcher et al (5,811,710) in view of Stich (5,789,691) as applied above, and further in view of Kinman (5,668,520) .

(VII) Argument:

The Agent of Record, having been engaged by the Party of Interest to perform an overall review and analysis of the final rejection, concluded that, while the basic subject matter was considered to merit allowance, final rejection was attributable to a combination of claim construction shortcomings and apparent technical misunderstandings and errors on the part of the Examiner regarding both the claimed invention and the cited

references, as evidenced by erroneous interpretations found in the final OA in attempted defense of flawed prior art references ranging from inappropriate to invalid. Based on the Agents past experience in prosecuting well over 125 allowed patents, making the OA final in this case, after only one previous OA, appeared premature in view of outstanding issues deserving further consideration.

Subsequent to a Notice of Appeal and Petition for Extension of Time, FAXd 06/26/06, the amendment filed 08/14/2006 presented the rejected claims in better form for consideration on appeal for admission under 37 CFR 1.116 (b)(2), the claims having been rewritten in a clearer and more direct form based as much as possible on structure rather than means plus function.

The after-final amendment dated 08/14/2006 is incorporated herein by reference. The following arguments essentially restate those presented in the amendment wherein the references that were cited in rejecting the canceled claims are readdressed vis-a-vis the rewritten claims 19-27 now pending, which are believed to define the claimed invention as clearly distinguished from the Blucher, Stich and Kinman references cited in the Rule 103(a) rejection.

In FIG. 2 and FIG. 4 of Blucher, assuming that bobbins 2, 2', 3 and 3' are of the usual electrical insulating material (and thus incorrectly hatched in the drawing), the sidewalls of plate 4 serve to alter the shape of the permanent magnetic fields engaging the strings. The tapered shape at one end of the

sidewalls is the central point of invention in the Blucher patent. Blucher follows the standard practice of known art in hum-bucking pickups: utilizing two identical coil bobbins as shown in FIGs. 2 and 4; since conventionally it is assumed that the required number of turns in the two windings will be equal or nearly so. This makes the height twice that of a single coil pickup so that with standard full-sized bobbins, hum-bucking pickups are too large to fit into the much smaller cutout of a single coil pickup guitar.

Another disadvantage of known art hum-bucking pickups such as Blucher is the degradation in signal strength and in tonal quality introduced by the intruding interconnection of the hum-bucking coil, whether connected in series or parallel.

Known hum-bucking pickup designs in which the size of both bobbins (and permanent magnets) is scaled down sufficiently to enable the pickup to fit into the smaller cutouts, have had to accept even further degradation regarding output level, tonal response and or/noise performance, despite judicious juggling of the number of turns and wire sizes in the two coils.

Consequently, many guitar players remain less than fully satisfied with the overall performance of known hum-bucking pickups, both full-sized and compact versions, compared to a standard set by optimal single-coil pickups.

These deficiencies have been addressed by the claimed invention by novel structure not found in Blucher or any other prior art: the applicant's claimed flux transfer plates that, in

addition to providing sidewalls flanking the pickup coil, extend seamlessly via an offset region down into the hum-bucking core region where, in large area contact with the core-piece. These plates extend to the bottom, thus extending full height of the pickup. This highly efficient flux transfer system intensifies the flux in the hum-bucking coil resulting in fewer turns required for hum-bucking, thus (1) improving the tonal quality closer to that of single pickups, and (2) with a smaller hum-bucking coil and bobbin, opening up the potential of making a hum-bucking pickup small enough to fit into a single coil pickup cutout of an existing instrument while minimizing the above-described tradeoff degradation of known art.

Blucher nowhere suggests applicants claimed flux transfer plates and the thus-enabled smaller sized hum-bucking coils as disclosed (24 and 26, FIGs. 3 and 5) and claimed, instead showing plate 4 made as a single piece in a U shaped cross section with two sidewalls, and showing conventional identical coil bobbins for the two like coils. In Blucher, between plate 4 and magnet 11 in FIG. 2 and between plate 4 and ferro-magnetic core 8, there are intervening seams that potentially form air gaps that, due the very small cross-sectional area, have a pronounced variable and detrimental effect on the distribution of hum flux lines, thus requiring conventional two-like-coil structure and failing to provide the seamless structure, characteristics and benefits of the claimed invention.

Blucher, addressing only pickup performance through



permanent magnet flux linkage with the strings and teaches special manipulation thereof, fails to teach anything about hum-bucking apart from a general description under BACKGROUND OF THE INVENTION (col. 1 starting at line 33) concluding with the hum-bucking arrangement's "disadvantage of not producing a strong signal" and going on to explain the purpose of the two side walls as making the permanent magnet/string system more efficient to strengthen the signal (line 59) in mitigation of this disadvantage.

The Stich patent totally fails to address hum-bucking or hum-bucking pickups, disclosing essentially a *single coil pickup* with a "single continuous coil" as stated in the abstract, in claim 1 (col. 11, line 4), and shown schematically in Fig. 7. At col. 1, lines 58-65 Stich distinguishes his patent from hum-bucking, citing patent 2,199,584 (misprinted in the patent as 2; 199,534). Stich shows, teaches and claims only separating a portion of the continuous coil so as to create a parameter of mutual inductance for purposes of shaping the audio response for tonal quality. Nowhere else in Stich is there found any teaching, showing or suggestion of hum-bucking or other cancellation effect. Thus, even in combination with Stich, Blucher fails to produce, enable, suggest, anticipate or render obvious the novel structure or advantages of the claimed invention.

The Examiner's reference to claim 16 of Stich in the paragraph at the top of page 6 in the OA is puzzling and apparently erroneous since Stich 5,789,691 has only 8 claims, and

nothing relating to a "printed circuit board" or "...difference between an electrical signal..." is found in Stich. As to Stich merely showing the two different- sized coil portions: this alone in combination with Blucher fails to enable, teach, suggest or anticipate the claimed invention.

The smaller size of the hum-bucking coil in the claimed invention is not merely a matter of design choice or it would have been done in the millions of known hum-bucking pickups now in use, testifying to the here-to-fore accepted design principle and practice that the two coil bobbins had to be made identical in size for hum-bucking cancellation effect.

Applicant's new departure is made possible only as the fortuitous result of the primary point of invention, i.e. unusual effectiveness of the flux transfer from the unobvious structural innovation of extending the upper sidewalls seamlessly down into the hum-bucking core region to intensify flux in the hum-bucking core region, thus requiring fewer turns in the hum-bucking coil.

The Kinman patent 5,668,520, cited in Rule 103(a) rejection, totally fails to disclose, show, teach, claim or suggest anything that could in any way be combined with Blucher to make or render obvious the claimed invention. Instead Kinman serves as a classic example of the prior art two-identical-coil philosophy and approach taken to the extreme by making the two coils identical not only in size, but in inductance (col. 5 line 32 "It is preferred that the inductance and impedance of the two coils be matched .."); clear evidence that, even combined with Blucher,

there was absolutely no thought, intent, suggestion or anticipation of applicants novelty i.e. using flux transfer plates redirected into the hum-bucking core region to intensify the flux there so the size and turns could be reduced.

In further contradistinction, the point of the Kinman invention is a second identical U- shaped member 23 with sidewalls located on the outside of the hum-bucking coil 20 as a mirror image of sidewall member 42 above on pickup coil 30, thus making the two coil assemblies identical in every respect.

In further teaching away from the claimed invention, Kinman's structure requiring a seam between members 23 and 42 would tend to introduce an air gap, whereas the likelihood of such unwanted air gaps is eliminated by the seamless structure of applicant's flux transfer plates.

No support is found anywhere in Kinman for the Examiner's erroneous statement (top of page 7, OA) that the "second set of walls.... guide magnetic flux into a core of said Lower (sic) coil winding...". Given the upper/lower symmetry of Kinman how does the Examiner reconcile the above statement with his statement on page 4 of the OA, Blucher's "...plate means...dividing... unwanted noise (flux lines) away from said upper coil.."? Would not the same identical plate means located identically outside the lower coil be expected to similarly divide the same unwanted noise (flux lines) away from the lower coil, and thus set up identical flux distribution in both the upper and lower coils?

Even this latter statement by the Examiner re the upper coil finds no support in Blucher which, as explained above, addresses only pickup performance, not hum-bucking, and fails to mention any purpose of the two side walls other than making the permanent magnet/string system more efficient to strengthen the signal (line 59) in mitigation of the disadvantage of loss introduced by hum-bucking.

The foregoing examples indicate a pattern of the Examiner arbitrarily attempting to characterize the cited prior art with language that is found only in the subject application and thus appears to originate therefrom, borrowed and applied in an erroneous manner than cannot find support from technical rationale, e.g. as shown above with regard to Blucher, and even more particularly with regard to Stich and Kinman.

The totality of the above discussions make it evident that the Blucher reference, or any combination thereof with Stich and/or Kinman, fails to disclose, show, claim, teach, or suggest anything leading from known art to the claimed invention, and that Blucher alone or in the hindsight combinations postulated in the OA would fail to enable the functions and advantages of the claimed invention.

#### SUMMARY

In view of the above information it is believed that the differences between the claimed invention and the cited references taken separately or combined have been shown to be of

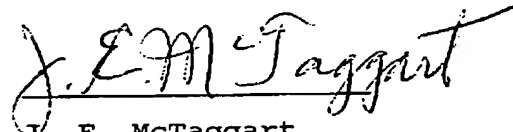
such nature and extent that the claimed invention would not be anticipated under rule 102 or rendered obvious under rule 103 thereby or by any other known art, therefore the claims as amended define matter that is novel, unobvious and patentable.

ALLOWABLE SUBJECT MATTER

New claims 19-27 are now pending. It is believed that all issues raised by the Examiner regarding the canceled claims have been addressed and remedied in these new claims, that no new matter has been introduced, and that these new claims, receiving full support from the specification and drawings, are in order for further examination and allowance. Such action is earnestly requested.

No additional fee is seen as required at this time.

Respectfully submitted



by J. E. McTaggart

Agent for the Applicant

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(VIII) Claim appendix:

This listing of claims, dated August 14, 2006, will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-5, 9, 10, 12, 13, and 15-18 (canceled)

19. (new): An improvement in stringed musical instrument hum-bucking electromagnetic pickups having a pickup coil surrounding a pickup core region containing a permanent magnet system linking strings of the instrument, and having a hum-bucking coil, surrounding a magnetically permeable core-piece in a hum-bucking core region located adjacent to and aligned with the pickup core region, interconnected in opposing polarity with the pickup coil and thus introducing tonal degradation, the improvement comprising:

a flux transfer structure of magnetically permeable material having a first portion externally surrounding at least a major portion of the pickup coil, a second portion disposed within the hum-bucking core region, contacting and surrounding at least a major portion of the core-piece, and an intermediate portion interconnecting the first and second portions contiguously and seamlessly, said flux transfer structure being made and arranged to funnel a set of environmental hum and noise flux lines encompassed by the first portion into a much smaller cross-sectional area including the core-piece within the hum-bucking core region encompassed by the second portion, thus intensifying flux density in the hum-bucking core region in an unusually efficient and effective manner due to the seamless

interconnection provided by the contiguous intermediate portion;  
and

the hum-bucking coil having substantially fewer coil winding turns and smaller size than the pickup coil, as enabled by effectiveness of said flux transfer structure, consequently providing improved tonal quality and smaller overall pickup size.

20. (new): The improvement in stringed musical instrument electromagnetic pickups as defined in claim 19 wherein said flux transfer structure comprises:

a pair of magnetically permeable flux transfer plates disposed in mirror image relationship externally along opposite sides of the electromagnetic pickup, each plate configured with a stepped cross-sectional shape having a first planar portion joined seamlessly via an intermediate step portion to a second planar portion thus offset from the first portion, the first portions being disposed flanking said pickup coil externally and the second portions being disposed within the second core region flanking said core-piece.

21. (new): The improvement in stringed musical instrument electromagnetic pickups as defined in claim 19 further comprising:

said hum-bucking coil being wound with additional turns greater than a nominal number of turns required for total hum-bucking cancellation effect; and

an adjustable resistor, connected in conjunction with said hum-bucking coil, made and arranged to provide adjustment for maximizing hum-bucking cancellation effect.

22. (new): An electro-magnetic pickup for sensing vibration of magnetically permeable strings of a stringed musical instrument and generating audio signals therefrom, comprising:

a pickup coil surrounding a pickup core region of designated length having an end facing the strings;

at least one permanent magnet, disposed in the pickup core region, magnetically linked to associated strings in a manner to generate an audio signal induced in the pickup coil from vibration of the strings when the instrument is played, thus providing an audio output signal for amplification;

a hum-bucking coil surrounding a hum-bucking core region located adjacent to and aligned with the pickup core region at an end thereof opposite the end facing the strings;

said hum-bucking coil being interconnected with said pickup coil in opposite polarity so as to tend to cancel effects of unwanted environmental magnetic flux lines representing hum and noise disturbances traversing the two core regions;

a flux transfer structure having a first portion externally surrounding at least a major portion of said pickup coil, a second portion disposed within the hum-bucking core region, surrounding at least a major portion of said core-piece, and an intermediate portion interconnecting the first and second portions contiguously and seamlessly, said flux transfer structure being made and arranged to transfer a set of flux lines encompassed by the first portion into a much smaller cross-sectional area encompassed by the second portion and consequently at greatly intensified flux density, in an unusually efficient and effective manner due to the seamless interconnection provided by the intermediate portion;



a magnetically permeable core-piece disposed within the hum-bucking core region;

said hum-bucking coil having substantially fewer coil winding turns and smaller size than said pickup coil, as enabled by unusual effectiveness of said flux transfer structure;

whereby tonal quality is improved to closer approach that of single coil pickups, and smaller overall pickup size creates possibility of deployment in instrument cutouts dimensioned for single coil pickups.

23. (new): An electro-magnetic pickup as defined in claim 22 wherein said flux transfer structure comprises:

a pair of magnetically permeable flux transfer plates disposed in mirror image relationship on opposite sides of said pickup, each plate being configured with a stepped cross-sectional shape having a first planar portion joined seamlessly via an intermediate step portion to a second planar portion thus offset from the first portion, the first portions being disposed flanking said pickup coil externally and the second portions being disposed internally within the second core region flanking said core-piece such that each of the flux transfer structure extends continuously and seamlessly over a full extent of said pickup coil and said hum-bucking coil.

24. (new): The improvement in stringed musical instrument electromagnetic pickups as defined in claim 22 further comprising:

said hum-bucking coil being wound with additional turns greater than a nominal number of turns required for maximum hum-bucking cancellation effect; and

an adjustable resistor, connected in conjunction with said hum-bucking coil, made and arranged to provide adjustability for maximizing hum-bucking cancellation effect.

25. (new): A method of processing undesired electromagnetic flux lines for improved tonal quality and more compact overall size in stringed musical instrument hum-bucking electromagnetic pickups having a pickup coil with a pickup core region containing a permanent magnet system linking strings of the instrument, and having a hum-bucking coil adjacent the pickup coil and connected in opposition thereto, the hum-bucking coil having a hum-bucking core region aligned with the pickup core region, the method comprising the steps of:

incorporating a magnetically permeable core-piece disposed within the hum-bucking core region; and

incorporating a flux transfer structure having a first portion externally surrounding at least a major portion of the pickup coil, a second portion disposed within the hum-bucking core region, surrounding at least a major portion of the core-piece, and an intermediate portion interconnecting the first and second portions contiguously and seamlessly, the flux transfer structure being made and arranged to provide a flux-funneling effect tending to transfer a set of flux lines encompassed by the first portion into a much smaller cross-sectional area within the hum-bucking core region encompassed by the second portion and accordingly at greatly intensified flux density, in an unusually

efficient and effective manner due to the seamless interconnection provided by the intermediate portion;

making the hum-bucking coil with substantially fewer turns than the pickup coil as enabled by the seamless flux transfer structure, thus improving tonal response of the pickup; and

making the hum-bucking coil substantially smaller in size than the pickup coil regarding core length and thus reducing overall size of the pickup, as enabled by the fewer turns in the hum-bucking coil.

26. (new) The electro-magnetic pickup as defined in claim 25 wherein the flux transfer structure comprises:

a pair of magnetically permeable flux transfer plates disposed in mirror image relationship on opposite sides of said pickup, each plate being configured with a stepped cross-sectional shape having a first planar portion joined seamlessly via an intermediate step portion to a second planar portion thus offset from the first portion, the first portions being disposed flanking said pickup coil externally and the second portions being disposed internally within the second core region flanking the core-piece such that each of the flux transfer structure extends continuously and seamlessly over a full extent of the pickup coil and the hum-bucking coil.

27. (new) The improvement in stringed musical instrument electromagnetic pickups as defined in claim 25 comprising the further steps of:

winding the hum-bucking coil with additional turns greater than a nominal number of turns required for maximum hum-bucking cancellation effect; and

connecting an adjustable resistor in conjunction with the hum-bucking coil so as to provide adjustability for maximizing hum-bucking cancellation effect.

(IX) Evidence appendix: None.

(X) Related proceedings: None.